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Translated Protein-Frames: 3-Nucleotide 111 to 1130  
mz5004\_vh.seq Length: 2691 24/Aug/1999

1 GCGGCCGCGTGACCATCACGTGCTCCAGCTACCAGGGCTACCCCTG  
46 AGGCTGAGGTGTTCTGGCAGGATGGGCAGGGTGTGCCCTGACTG  
  
91 GCAACGTGACCACGTGCGCAGATGGCCAACGAGCAGGGCTTGTTTG  
MetAlaAsnGluGlnGlyLeuPheA  
  
136 ATGTGCACAGCATCCTGCGGGTGGTGCTGGGTGCAAATGGCACCT  
spValHisSerIleLeuArgValValLeuGlyAlaAsnGlyThrT  
  
181 ACAGCTGCCTGGTGCGCAACCCCGTGCTGCAGCAGGATGCGCACA  
yrSerCysLeuValArgAsnProValLeuGlnGlnAspAlaHisS  
  
226 GCTCTGTCACCATCACACCCAGAGAAGCCCCACAGGAGCCGTGG  
erSerValThrIleThrProGlnArgSerProThrGlyAlaValG  
  
271 AGGTCCAGGTCCCTGAGGACCCGGTGGTGGCCCTAGTGGGCACCG  
luValGlnValProGluAspProValValAlaLeuValGlyThrA  
  
316 ATGCCACCCTGCACCTGCTCCTTCTCCCCGAGCCTGGCTTCAGCC  
spAlaThrLeuHisCysSerPheSerProGluProGlyPheSerL  
  
361 TGACACAGCTCAACCTCATCTGGCAGCTGACAGACACCAAACAGC  
euThrGlnLeuAsnLeuIleTrpGlnLeuThrAspThrLysGlnL  
  
406 TGGTGCACAGTTTTCACCGAAGGCCGGGACCAGGGCAGCGCTATG  
euValHisSerPheThrGluGlyArgAspGlnGlySerAlaTyrA  
  
451 CCAACCGCACGGCCCTCTTCCCGGACCTGCTGGCACAAGGCAATG  
laAsnArgThrAlaLeuPheProAspLeuLeuAlaGlnGlyAsnA  
  
496 CATCCCTGAGGCTGCAGCGCGTGCGTGTGGCGGACGAGGGCAGCT  
laSerLeuArgLeuGlnArgValArgValAlaAspGluGlySerP  
  
541 TCACCTGCTTCGTGAGCATCCGGGATTTCCGGCAGCGCTGCCGTCA  
heThrCysPheValSerIleArgAspPheGlySerAlaAlaValS  
  
586 GCCTGCAGGTGGCCGCTCCCTACTCGAAGCCCAGCATGACCCTGG  
erLeuGlnValAlaAlaProTyrSerLysProSerMetThrLeuG  
  
631 AGCCCAACAAGGACCTGCGGCCAGGGGACACGGTGACCATCACGT  
luProAsnLysAspLeuArgProGlyAspThrValThrIleThrC  
  
676 GCTCCAGCTACCGGGGCTACCCTGAGGCTGAGGTGTTCTGGCAGG  
ysSerSerTyrArgGlyTyrProGluAlaGluValPheTrpGlnA  
  
721 ATGGGCAGGGTGTGCCCTGACTGGCAACGTGACCACGTGCGAGA  
spGlyGlnGlyValProLeuThrGlyAsnValThrThrSerGLnM  
  
766 TGGCCAACGAGCAGGGCTTGTTTGATGTGCACAGCGTCTGCGGG  
etAlaAsnGluGlnGlyLeuPheAspValHisSerValLeuArgV

Fig. 1

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811 TGGTGTCTGGGTGCGAATGGCACCTACAGCTGCCTGGTGGCGCAACC  
alValLeuGlyAlaAsnGlyThrTyrSerCysLeuValArgAsnP

856 CCGTGTCTGCAGCAGGATGCGCACGGCTCTGTCAACCATCACAGGGC  
roValLeuGlnGlnAspAlaHisGlySerValThrIleThrGlyG

901 AGCCTATGACATTCCCCCAGAGGCCCTGTGGGTGACCGTGGGGC  
lnProMetThrPheProProGluAlaLeuTrpValThrValGlyL

946 TCTCTGTCTGTCTCATTGCACTGCTGGTGGCCCTGGCTTTTCGTGT  
euSerValCysLeuIleAlaLeuLeuValAlaLeuAlaPheValC

991 GCTGGAGAAAGATCAAACAGAGCTGTGAGGAGGAGAATGCAGGAG  
ysTrpArgLysIleLysGlnSerCysGluGluGluAsnAlaGlyA

1036 CCGAGGACCAGGATGGGGAGGGAGAAGGCTCCAAGACAGCCCTGC  
laGluAspGlnAspGlyGluGlyGluGlySerLysThrAlaLeuG

1081 AGCCTCTGAAACACTCTGACAGCAAAGAAGATGATGGACAAGAAA  
lnProLeuLysHisSerAspSerLysGluAspAspGlyGlnGluI

1126 TAGCCTGACCATGAGGACCAGGGAGCTGCTACCCCTCCCTACAGC  
leAla

1171 TCCTACCCCTCTGGCTGCAATGGGGCTGCACTGTGAGCCCTGCCCC  
1216 CAACAGATGCATCTGTCTGACAGGTGGGCTCCTTCTCCAAAGG  
1261 ATGCGATACACAGACCACTGTGCAGCCTTATTTCTCCAATGGACA  
1306 TGATTCCCAAGTCATCCTGTCTGCCTTTTTTCTTATAGACACAATG  
1351 AACAGACCACCCACAACCTTAGTTCTCTAAGTCATCCTGCCTGT  
1396 GCCTTATTTTACAGTACATACATTCTTAGGGACACAGTACACTG  
1441 ACCACATCACCACCCTCTTCTTCCAGTGTGCGTGGACCATCTGG  
1486 CTGCCTTTTTTCTCCAAAGATGCAATATTCAGACTGACTGACCC  
1531 CCTGCCTTATTTACCAAAGACACGATGCATAGTCACCCCGGCCT  
1576 TGTTCCTCCAATGGCCGTGATACACTAGTGATCATGTTACGCCCT  
1621 GCTTCCACCTGCATAGAATCTTTCTTCTCAGACAGGGACAGTGC  
1666 GGCCTCAACATCTCCTGGAGTCTAGAAGCTGTTTCCTTTCCCCCTC  
1711 CTTCCTCCTCTTGCTCTAGCCTTAATACTGGCCTTTTCCCTCCCT  
1756 GCCCCAAGTGAAGACAGGGCACTCTGCGCCCAACACATGCACAGC  
1801 TGTGCATGGAGACCTGCAGGTGCACGTGCTGGAACACGTGTGGTT  
1846 CCCCCCTGGCCCAGCCTCCTCTGCAGTGGCCCTCTCCCTTGCCCA  
1891 TCCTCCCCACGGAAGCATGTGCTGGTCACACTGGTTCTCCAGGGG  
1936 TCTGTGATGGGGCCCCCTGGGGGTGAGCTTCTGTCCCTCTGCCTTC  
1981 TCACCTCTTTGTTCTTTCTTTTCATGTATCCATTAGTTGATGT  
2026 TTATTGAGCAACTACAGATGTCAGCACTGTGTTAGGTGCTGGGGG  
2071 CCCTGCGTGGGAAGATAAAGTTCCCTCCCTCAAGGACTCCCCATCC  
2116 AGCTGGGAGACAGACAACCTAATACTGCACTGCACCCTGCGGTTTGCA  
2161 GGGGGCTCCTGCCTGGCTCCCTGCTCCACACCTCCTCTGTGGCTC  
2206 AAGGCTTCCTGGATACCTCACCCCCATCCACCCATAATTCTTAC  
2251 CCAGAGCATGGGGTTGGGGCGGAAACCTGGAGAGAGGGACATAGC  
2296 CCCTCGCCACGGCTAGAGAATCTGGTGGTGTCAAAATGTCTGTC  
2341 CAGGTGTGGGCAGGTGGGCAGGCACCAAGGCCCTCTGGACCTTTC  
2386 ATAGCAGCAGAAAAGGCAGAGCCTGGGGCAGGGCAGGGCCAGGAA  
2431 TGCTTTGGGGACACCGAGGGGACTGCCCCCACCCTTCCCTTGGT  
2476 GCTATTCTGGGGCTGGGGCAGTCTTTTCTTGGCTTGCCCTTGCC  
2521 AGCTCCCGGCCTCTGGTAGAGTGAGACTTCAGACGTTCTGATGCC

Fig. 1 Continued

2566 TTCCGGATGTCATCTCTCCCTGCCCCAGGAATGGAAGATGTGAGG  
2611 ACTTCTAATTTAAATGTGGGACTCGGAGGGATTTTGTAAGTGGG  
2656 GGTATATTTTGGGGAAAATAAATGTCTTTGTAAAA

Fig. 1 Continued

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Translated Protein-Frame: 2-Nucleotide 2 to 1324  
Mz5004 12/16/99

1  
CCCTCTTCCCGGACCTGCTGGCACAGGGCAACGCATCCCTGAGGC  
ProLeuProGlyProAlaGlyThrGlyGlnArgIleProGluAl  
46  
TGCAGCGCGTGCCTGTAGCGGACGAGGGCAGCTTCACCTGCTTCG  
aAlaAlaArgAlaCysSerGlyArgGlyGlnLeuHisLeuLeuAr  
91  
TGAGCATCCGGGATTTCGGCAGCGCTGCCGTGAGCCTGCAGGTGG  
gGluHisProGlyPheArgGlnArgCysArgGlnProAlaGlyG1  
136  
CCGCTCCCTACTCGAAGCCCAGCATGACCCTGGAGCCCAACAAGG  
yArgSerLeuLeuGluAlaGlnHisAspProGlyAlaGlnGlnG1  
181  
ACCTGCGGCCAGGGGACACGGTGTGACCATCACGTGCTCCAGCTA  
yProAlaAlaArgGlyHisGlyValThrIleThrCysSerSerTy  
226  
CCAGGGCTACCCTGAGGCTGAGGTGTTCTGGCAGGATGGGCAGGG  
rGlnGlyTyrProGluAlaGluValPheTrpGlnAspGlyGlnG1  
271  
TGTGCCCCTGACTGGCAACGTGACCACGTGCGAGATGGCCAACGA  
yValProLeuThrGlyAsnValThrThrSerGlnMetAlaAsnG1  
316  
GCAGGGCTTGTTTGATGTGCACAGCATCCTGCGGGTGGTGCTGGG  
uGlnGlyLeuPheAspValHisSerIleLeuArgValValLeuG1  
361  
TGCAAATGGCACCTACAGCTGCCTGGTGCGCAACCCCGTGCTGCA  
yAlaAsnGlyThrTyrSerCysLeuValArgAsnProValLeuG1  
406  
GCAGGATGCGCACAGCTCTGTCACCATCACACCCAGAGAAGCCC  
nGlnAspAlaHisSerSerValThrIleThrProGlnArgSerPr  
451  
CACAGGAGCCGTGGAGGTCCAGGTCCCTGAGGACCCGGTGGTGGC  
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496  
CCTAGTGGGCACCGATGCCACCCTGCACTGCTCCTTCTCCCCGA  
aLeuValGlyThrAspAlaThrLeuHisCysSerPheSerProG1  
541  
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uProGlyPheSerLeuThrGlnLeuAsnLeuIleTrpGlnLeuTh  
586  
AGACACCAAACAGCTGGTGCACAGTTTCACCGAAGGCCGGGACCA  
rAspThrLysGlnLeuValHisSerPheThrGluGlyArgAspG1  
631  
GGGCAGCGCCTATGCCAACCGCACGGCCCTCTTCCCGGACCTGCT  
nGlySerAlaTyrAlaAsnArgThrAlaLeuPheProAspLeuLe  
676  
GGCACAAGGCAATGCATCCCTGAGGCTGCAGCGCGTGCGTGTGGC  
uAlaGlnGlyAsnAlaSerLeuArgLeuGlnArgValArgValAl  
721  
GGACGAGGGCAGCTTCACCTGCTTCGTGAGCATCCGGGATTTCGG  
aAspGluGlyS rPheThrCysPheValSerIleArgAspPheG1

Fig. 2

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766 CAGCGCTGCCGTCAGCCTGCAGGTGGCCGCTCCCTACTCGAAGCC  
ySerAlaAlaValSerLeuGlnValAlaAlaProTyrSerLysPr  
811 CAGCATGACCCTGGAGCCCAACAAGGACCTGCGGCCAGGGGACAC  
oSerMetThrLeuGluProAsnLysAspLeuArgProGlyAspTh  
856 GGTGACCATCACGTGCTCCAGCTACCGGGGCTACCCTGAGGCTGA  
rValThrIleThrCysSerSerTyrArgGlyTyrProGluAlaGl  
901 GGTGTTCTGGCAGGATGGGCAGGGTGTGCCCCTGACTGGCAACGT  
uValPheTrpGlnAspGlyGlnGlyValProLeuThrGlyAsnVa  
946 GACCACGTCGCAGATGGCCAACGAGCAGGGCTTGTTTGATGTGCA  
lThrThrSerGlnMetAlaAsnGluGlnGlyLeuPheAspValHi  
991 CAGCGTCCTGCGGGTGGTGCTGGGTGCGAATGGCACCTACAGCTG  
sSerValLeuArgValValLeuGlyAlaAsnGlyThrTyrSerCy  
1036 CCTGGTGCGCAACCCCGTGCTGCAGCAGGATGCGCACGGCTCTGT  
sLeuValArgAsnProValLeuGlnGlnAspAlaHisGlySerVa  
1081 CACCATCACAGGGCAGCCTATGACATTCCCCCAGAGGCCCTGTG  
lThrIleThrGlyGlnProMetThrPheProProGluAlaLeuTr  
1126 GGTGACCGTGGGGCTCTCTGTCTGTCTCATTGCACTGCTGGTGGC  
pValThrValGlyLeuSerValCysLeuIleAlaLeuLeuValAl  
1171 CCTGGCTTTCGTGTGCTGGAGAAAGATCAAACAGAGCTGTGAGGA  
aLeuAlaPheValCysTrpArgLysIleLysGlnSerCysGluGl  
1216 GGAGAATGCAGGAGCCGAGGACCAGGATGGGGAGGGAGAAGGCTC  
uGluAsnAlaGlyAlaGluAspGlnAspGlyGluGlyGluGlySe  
1261 CAAGACAGCCCTGCAGCCTCTGAAACACTCTGACAGCAAAGAAGA  
rLysThrAlaLeuGlnProLeuLysHisSerAspSerLysGluAs  
1306 TGATGGACAAGAAATAGCCTGACCATGAGGACCAGGGAGCTGCTA  
pAspGlyGlnGluIleAla  
1351 CCCCTCCCTACAGCTCCTACCCCTCTGGCTGCAATGGGGCTGCACT  
1396 GTGAGCCCTGCCCCCAACAGATGCATCCTGCTCTGACAGGTGGGC  
1441 TCCTTCTCCAAAGGATGCGATACACAGACCACTGTGCAGCCTTAT  
1486 TTCTCCAATGGACATGATTCCCAAGTCATCCTGCTGCCTTTTTTC  
1531 TTATAGACACAATGAACAGACCACCCACAACCTTAGTTCTCTAAG  
1576 TCATCCTGCCTGCTGCCTTATTTACAGTACATACATTTCTTAGG  
1621 GACACAGTACACTGACCACATCACCACCCTCTTCTTCCAGTGCTG  
1666 CGTGGACCATCTGGCTGCCTTTTTTCTCCAAAAGATGCAATATTC

Fig. 2 Continued

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1711 AGACTGACTGACCCCCTGCCTTATTTACCAAAGACACGATGCAT  
1756 AGTCACCCCGGCCTTGTTTCTCCAATGGCCGTGATACACTAGTGA  
1801 TCATGTTTACGCCCTGCTTCCACCTGCATAGAATCTTTTCTTCTCA  
1846 GACAGGGACAGTGCGGCCTCAACATCTCCTGGAGTCTAGAAGCTG  
1891 TTTCTTTTCCCCCTCCTTCCTCCTCTTGCTCTAGCCTTAATACTGG  
1936 CCTTTTCCCTCCCTGCCCCAAGTGAAGACAGGGCACTCTGCGCCC  
1981 ACCACATGCACAGCTGTGCATGGAGACCTGCAGGTGCACGTGCTG  
2026 GAACACGTGTGGTTCCCCCCTGGCCCAGCCTCCTCTGCAGTGCCC  
2071 CTCTCCCCCTGCCCATCCTCCCCACGGAAGCATGTGCTGGTCACAC  
2116 TGGTTCTCCAGGGGTCTGTGATGGGGCCCCCTGGGGGTCAGCTTCT  
2161 GTCCCTCTGCCTTCTCACCTCTTTGTTCTTTCTTTTCATGTATC  
2206 CATTCAAGTTGATGTTTATTGAGCAACTACAGATGTCAGCACTGTG  
2251 TTAGGTGCTGGGGGCCCTGCGTGGGAAGATAAAGTTCTCTCCCTCA  
2296 AGGACTCCCCATCCAGCTGGGAGACAGACAACCTAACTACACTGCA  
2341 CCCTGCGGTTTGCAGGGGGCTCCTGCCTGGCTCCCTGCTCCACAC  
2386 CTCTCTGTGGCTCAAGGCTTCTGATACCTCACCCCCATCCCA  
2431 CCCATAATTCTTACCCAGAGCATGGGGTTGGGGCGGAAACCTGGA  
2476 GAGAGGGACATAGCCCCCTGCCACGGCTAGAGAATCTGGTGGTGT  
2521 CCAAAATGTCTGTCCAGGTGTGGGCAGGTGGGCAGGCACCAAGGC  
2566 CCTCTGGACCTTTCATAGCAGCAGAAAAGGCAGAGCCTGGGGCAG  
2611 GGCAGGGCCAGGAATGCTTTGGGGACACCGAGGGGACTGCCCCC  
2656 ACCCCCACCATGGTGCTATTCTGGGGCTGGGGCAGTCTTTTCTCTG  
2701 GCTTGCCCTCTGGCCAGCTCCCGGCCTCTGGTAGAGTGAGACTTCA  
2746 GACGTTCTGATGCCTTCCGGATGTCATCTCTCCCTGCCCCAGGAA  
2791 TGGAAGATGTGAGGACTTCTAATTTAAATGTGGGACTCGGAGGGA  
2836 TTTTGTAAGTGGGGGTATATTTTGGGGAAAATAAATGTCTTTGT  
2881 AAAAA

Fig. 2 Continued

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Translated Protein 534 aa-Frame: 3-Nucleotide 60 to 1661  
2/14/00

1  
GCGGCCGCGGGGCAGCCTTCCACCACGGGGAGCCCAGCTGTCAGC  
46  
CGCCTCACAGGAAGATGCTGCGTCGGCGGGGCAGCCCTGGCATGG  
MetLeuArgArgArgGlySerProGlyMetG  
91  
GTGTGCATGTGGGTGCAGCCCTGGGAGCACTGTGGTTCTGCCTCA  
lyValHisValGlyAlaAlaLeuGlyAlaLeuTrpPheCysLeuT  
136  
CAGGAGCCCTGGAGGTCCAGGTCCCTGAAGACCCAGTGGTGGCAC  
hrGlyAlaLeuGluValGlnValProGluAspProValValAlaL  
181  
TGGTGGGCACCGATGCCACCCTGTGCTGCTCCTTCTCCCCTGAGC  
euValGlyThrAspAlaThrLeuCysCysSerPheSerProGluP  
226  
CTGGCTTCAGCCTGGCACAGCTCAACCTCATCTGGCAGCTGACAG  
roGlyPheSerLeuAlaGlnLeuAsnLeuIleTrpGlnLeuThrA  
271  
ATACCAAACAGCTGGTGCACAGCTTTGCTGAGGGCCAGGACCAGG  
spThrLysGlnLeuValHisSerPheAlaGluGlyGlnAspGlnG  
316  
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lySerAlaTyrAlaAsnArgThrAlaLeuPheProAspLeuLeuA  
361  
CACAGGGCAACGCATCCCTGAGGCTGCAGCGCGTGCCTGTGGCGG  
laGlnGlyAsnAlaSerLeuArgLeuGlnArgValArgValAlaA  
406  
ACGAGGGCAGCTTCACCTGCTTCGTGAGCATCCGGGATTTCCGGCA  
spGluGlySerPheThrCysPheValSerIleArgAspPheGlyS  
451  
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erAlaAlaValSerLeuGlnValAlaAlaProTyrSerLysPros  
496  
GCATGACCCTGGAGCCCAACAAGGACCTGCGGCCAGGGGACACGG  
erMetThrLeuGluProAsnLysAspLeuArgProGlyAspThrV  
541  
TGACCATCACGTGCTCCAGCTACCAGGGCTACCCTGAGGCTGAGG  
alThrIleThrCysSerSerTyrGlnGlyTyrProGluAlaGluV  
586  
TGTTCTGGCAGGATGGGCAGGGTGTGCCCTGACTGGCAACGTGA  
alPheTrpGlnAspGlyGlnGlyValProLeuThrGlyAsnValT  
631  
CCACGTCGCAGATGGCCAACGAGCAGGGCTTGTTTGATGTGCACA  
hrThrSerGlnMetAlaAsnGluGlnGlyLeuPheAspValHisS  
676  
GCATCCTGCGGGTGGTGCTGGGTGCAAATGGCACCTACAGCTGCC  
erIleLeuArgValValLeuGlyAlaAsnGlyThrTyrSerCysL  
721  
TGGTGGCAACCCCGTGCTGCAGCAGGATGCGCACAGCTCTGTCA  
euValArgAsnProValLeuGlnGlnAspAlaHisSerSerValT

Fig. 3

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766 CCATCACACCCCAGAGAAGCCCCACAGGAGCCGTGGAGGTCCAGG  
hrIleThrProGlnArgSerProThrGlyAlaValGluValGlnV  
811 TCCCTGAGGACCCGGTGGTGGCCCTAGTGGGCACCGATGCCACCC  
alProGluAspProValValAlaLeuValGlyThrAspAlaThrL  
856 TGGCTGCTCCTTCTCCCCGAGCCTGGCTTCAGCCTGGCACAGC  
euArgCysSerPheSerProGluProGlyPheSerLeuAlaGlnL  
901 TCAACCTCATCTGGCAGCTGACAGACACCAAACAGCTGGTGCACA  
euAsnLeuIleTrpGlnLeuThrAspThrLysGlnLeuValHisS  
946 GTTTCACCGAAGGCCGGGACCAGGGCAGCGCCTATGCCAACCGCA  
erPheThrGluGlyArgAspGlnGlySerAlaTyrAlaAsnArgT  
991 CGGCCCTCTTCCCGGACCTGCTGGCACAAGGCAATGCATCCCTGA  
hrAlaLeuPheProAspLeuLeuAlaGlnGlyAsnAlaSerLeuA  
1036 GGCTGCAGCGCGTGCCTGTGGCGGACGAGGGCAGCTTCACCTGCT  
rgLeuGlnArgValArgValAlaAspGluGlySerPheThrCysP  
1081 TCGTGAGCATCCGGGATTTCCGGCAGCGCTGCCGTCAGCCTGCAGG  
heValSerIleArgAspPheGlySerAlaAlaValSerLeuGlnV  
1126 TGGCCGCTCCCTACTCGAAGCCCAGCATGACCCTGGAGCCCCACA  
alAlaAlaProTyrSerLysProSerMetThrLeuGluProAsnL  
1171 AGGACCTGCGGCCAGGGGACACGGTGACCATCACGTGCTCCAGCT  
ysAspLeuArgProGlyAspThrValThrIleThrCysSerSerT  
1216 ACCGGGGCTACCCTGAGGCTGAGGTGTTCTGGCAGGATGGGCAGG  
yrArgGlyTyrProGluAlaGluValPheTrpGlnAspGlyGlnG  
1261 GTGTGCCCCTGACTGGCAACGTGACCACGTGCGAGATGGCCAACG  
lyValProLeuThrGlyAsnValThrThrSerGlnMetAlaAsnG  
1306 AGCAGGGCTTGTTTGATGTGCACAGCGTCTGCGGGTGGTGCTGG  
luGlnGlyLeuPheAspValHisSerValLeuArgValValLeuG  
1351 GTGCGAATGGCACCTACAGCTGCCTGGTGGCGCAACCCCGTGCTGC  
lyAlaAsnGlyThrTyrSerCysLeuValArgAsnProValLeuG  
1396 AGCAGGATGCGCACGGCTCTGTCAACATCACAGGGCAGCCTATGA  
lnGlnAspAlaHisGlySerValThrIleThrGlyGlnProMetT  
1441 CATTCCCCCAGAGGCCCTGTGGGTGACCGTGGGGCTGTCTGTCT  
hrPheProProGluAlaLeuTrpValThrValGlyLeuSerValC  
1486 GTCTCATTGCACTGCTGGTGGCCCTGGCTTTCGTGTGCTGGAGAA  
ysLeuIleAlaLeuLeuValAlaLeuAlaPheValCysTrpArgL  
1531 AGATCAAACAGAGCTGTGAGGAGGAGAATGCAGGAGCTGAGGACC  
ysIleLysGlnSerCysGluGluGluAsnAlaGlyAlaGluAspG  
1576 AGGATGGGGAGGGAGAAGGCTCCAAGACAGCCCTGCAGCCTCTGA  
lnAspGlyGluGlyGluGlySerLysThrAlaLeuGlnProLeuL

Fig. 3 Continued



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1621 AACACTCTGACAGCAAAGAAGATGATGGACAAGAAATAGCCTGAC  
ysHisSerAspSerLysGluAspAspGlyGlnGluIleAla  
1666 CATGAGGACCAGGGAGCTGCTACCCCTCCCTACAGCTCCTACCCT  
1711 CTGGCTGCAATGGGGCTGCACTGTGAGCCCTGCCCCAACAGATG  
1756 CATCCTGCTCTGACAGGTGGGCTCCTTCTCCAAGGATGCGATAC  
1801 ACAGACCACTGTGCAGCCTTATTTCTCCAATGGACATGATTCCCA  
1846 AGTCATCCTGCTGCCTTTTTTCTTATAGACACAATGAACAGACCA  
1891 CCCACAACCTTAGTTCTCTAAGTCATCCTGCCTGCTGCCTTATTT  
1936 CACAGTACATACATTTCTTAGGGACACAGTACACTGACCACATCA  
1981 CCACCCTCTTCTTCCAGTGCTGCGTGGACCATCTGGCTGCCTTTT  
2026 TTCTCCAAAAGATGCAATATTCAGACTGACTGACCCCTGCCTTA  
2071 TTTCACCAAAGACACGATGCATAGTCACCCCGACCTTGTTTCTCC  
2116 AATGGCCGTGATACACTAGTGATCATGTTTCAGCCCTGCTTCCACC  
2161 TGCATAGAATCTTTTCTTCTCAGACAGGGACAGTGCGGCCTCAAC  
2206 ATCTCCTGGAGTCTAGGCGGCCGC

Fig. 3 Continued

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PCT/US00/24220

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## Multible Alignment:

```
B7-1 HUMAN      --MGHTRRQGTSPSPCPYLNFPOHVLAGE--HFCSGVIEVTKREVAITSEGHNVSV
Q28499_rhesus_B7-1 --MGHTRRQETSPSPCPYLKFFQHEVLAGE--HFCSGVIEVTKREVAITSEGHNVSV
B7-1 RABBIT     --MGHTLRPGTPLPCLLKLCLHVLAGE--HFSSGTSQVTKSVREVAITSEGHNVSI
U57755_cat_B7-1 --MGHAAKWKTPLLKHPYKLPFPHVLAGE--YFCSELDVTKVREVAITSEGHNVSI
B7_1 MOUSE     MACNCQLMQDTPLLPFCPLRLHVLAGE--HFCSGVIEVTKREVAITSEGHNVSV
AF157827_cat_B7-2 -----MGICDSTMGSETHVMAH-----LSGVSSKSKQVFNKICELPGCETNSQ
aaf17297_dog_B7-2 -----MYLRCTMSETHVMAH-----LYGAASKSKQVFNKICELPGCETNSQ
176088_pig_B7-2 -----MGPSNHFVMAH-----LSGAASKSKQVFNKICELPGCETNSQ
u04343_hu_B7-2 -----MGPSNHFVMAH-----LSGAASKSKQVFNKICELPGCETNSQ
P42082_mus_B7-2 -----MDPCTMGSETHVMAH-----LSDAVSVETQVFNKICELPGCETNSQ
aac52336_mus_B7-2_alt.spl -----MGSETHVMAH-----LSDAVSVETQVFNKICELPGCETNSQ
mz5020.protein   -----MLRRRGSPGSGVHGAALGNHFCITGALEVQVPEDEVAIVGTDAHLCSSPEP
Q99420q99420_put_hum_B7-3 ----MASFLAFLLLNFRCLLQLLMPHSAQFSVLGPGSGHIAVGEALHPECHLFPDM
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B7-1 HUMAN      E-EIAQTRDQKOKENAVLTMS--GDMN--LWPEYKRTDITNN--LSIVLLAL
Q28499_rhesus_B7-1 E-EIAQTRDQKOKENAVLTMS--GDMN--LWPEYKRTDITNN--LSIVLLAL
B7-1 RABBIT     D-EIARTRDQKOKDQAVLSMS--GQVE--LWPEYKRTDITNN--LSIVLLAL
U57755_cat_B7-1 K-EIIEIRLQKOKDEAVLAVES--GKVQ--LWPEYKRTDITNN--LSIVLLAL
B7_1 MOUSE     E-DESEDRDQKOKENAVLSVDA--GALK--LWPEYKRTDITNN--LSIVLLAL
AF157827_cat_B7-2 NISLDELVVEHODQKAVLYEELR--GKNPQNVHVKKGRTSSEDKIN--LWPEYKRTDITNN
aaf17297_dog_B7-2 NISLDELVVEHODQKAVLYEELR--GKNPQNVHVKKGRTSSEDKIN--LWPEYKRTDITNN
176088_pig_B7-2 NISLDELVVEHODQKAVLYEELR--GKNPQNVHVKKGRTSSEDKIN--LWPEYKRTDITNN
u04343_hu_B7-2 NISLDELVVEHODQKAVLYEELR--GKNPQNVHVKKGRTSSEDKIN--LWPEYKRTDITNN
P42082_mus_B7-2 NISLDELVVEHODQKAVLYEELR--GKNPQNVHVKKGRTSSEDKIN--LWPEYKRTDITNN
aac52336_mus_B7-2_alt.spl NISLDELVVEHODQKAVLYEELR--GKNPQNVHVKKGRTSSEDKIN--LWPEYKRTDITNN
mz5020.protein   GFSLAQNLNLTQLTKQLVHSEVAGGQDQ--GSANVNRITALEPDLAQGNASLRLQV
Q99420q99420_put_hum_B7-3 S--AETMELNIVSSSLRQVNVYADGREVEDRQSAFYGRTSILRDGITAGKAAFRUHN
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B7-1 HUMAN      RPSDEGAYCGVLYKQKIDFKREH LAEVLSVRADEPTPSIEDSEIPPSN--LWPEYKRTDITNN
Q28499_rhesus_B7-1 RPSDEGAYCGVLYKQKIDFKREH LAEVLSVRADEPTPSIEDSEIPPSN--LWPEYKRTDITNN
B7-1 RABBIT     RPSDEGAYCGVLYKQKIDFKREH LAEVLSVRADEPTPSIEDSEIPPSN--LWPEYKRTDITNN
U57755_cat_B7-1 RPSDEGAYCGVLYKQKIDFKREH LAEVLSVRADEPTPSIEDSEIPPSN--LWPEYKRTDITNN
B7_1 MOUSE     VPSDEGAYCGVLYKQKIDFKREH LAEVLSVRADEPTPSIEDSEIPPSN--LWPEYKRTDITNN
AF157827_cat_B7-2 QKNDGAYCGVLYKQKIDFKREH LAEVLSVRADEPTPSIEDSEIPPSN--LWPEYKRTDITNN
aaf17297_dog_B7-2 QKNDGAYCGVLYKQKIDFKREH LAEVLSVRADEPTPSIEDSEIPPSN--LWPEYKRTDITNN
176088_pig_B7-2 QKNDGAYCGVLYKQKIDFKREH LAEVLSVRADEPTPSIEDSEIPPSN--LWPEYKRTDITNN
u04343_hu_B7-2 QKNDGAYCGVLYKQKIDFKREH LAEVLSVRADEPTPSIEDSEIPPSN--LWPEYKRTDITNN
P42082_mus_B7-2 QKNDGAYCGVLYKQKIDFKREH LAEVLSVRADEPTPSIEDSEIPPSN--LWPEYKRTDITNN
aac52336_mus_B7-2_alt.spl QKNDGAYCGVLYKQKIDFKREH LAEVLSVRADEPTPSIEDSEIPPSN--LWPEYKRTDITNN
mz5020.protein   RYDEGSGTCEVYSIRDFG-----SANSIQAAPKSPESVILPEPKDLRPGDTVILTCS
Q99420q99420_put_hum_B7-3 TGSDEWYLGDFQDGFY-----EKAIVGKVAALGSOLEVWVKGKIDGG--LH-LEGR
```

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B7-1 HUMAN      NSGGPEPILSVLENGE--ELNAINTVS--ODPEELIYAVSKDDAVITNH--SPFG
Q28499_rhesus_B7-1 NSGGPEPILSVLENGE--ELNAINTVS--ODPEELIYAVSKDDAVITNH--SPFG
B7-1 RABBIT     NSGGPEPILSVLENGE--ELNAINTVS--ODPEELIYAVSKDDAVITNH--SPFG
U57755_cat_B7-1 NSGGPEPILSVLENGE--ELNAINTVS--ODPEELIYAVSKDDAVITNH--SPFG
B7_1 MOUSE     NSGGPEPILSVLENGE--ELNAINTVS--ODPEELIYAVSKDDAVITNH--SPFG
AF157827_cat_B7-2 SIQGVPEPKEMFLVKTENSSITKYDTMKKSONNVIELYAVSLSPSSYPEAH-NVSVTC
aaf17297_dog_B7-2 SIQGVPEPKEMFLVKTENSSITKYDTMKKSONNVIELYAVSLSPSSYPEAH-NVSVTC
176088_pig_B7-2 SIQGVPEPKEMFLVKTENSSITKYDTMKKSONNVIELYAVSLSPSSYPEAH-NVSVTC
u04343_hu_B7-2 SIQGVPEPKEMFLVKTENSSITKYDTMKKSONNVIELYAVSLSPSSYPEAH-NVSVTC
P42082_mus_B7-2 SIQGVPEPKEMFLVKTENSSITKYDTMKKSONNVIELYAVSLSPSSYPEAH-NVSVTC
aac52336_mus_B7-2_alt.spl SIQGVPEPKEMFLVKTENSSITKYDTMKKSONNVIELYAVSLSPSSYPEAH-NVSVTC
mz5020.protein   SIQGVPEPKEMFLVKTENSSITKYDTMKKSONNVIELYAVSLSPSSYPEAH-NVSVTC
Q99420q99420_put_hum_B7-3 SIQGVPEPKEMFLVKTENSSITKYDTMKKSONNVIELYAVSLSPSSYPEAH-NVSVTC
```

Fig. 4

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B7-1_HUMAN	LLSYGHRVN--QT--EAVNTTQOE---HF--DN--LLPSQAITLTS-----VAGHFW
Q28499_rhesus_B7-1	LLSYGHRVN--QT--EAVNTTQOE---HF--DN--LLPSQAITLTS-----VAGHFW
B7-1_RABBIT	LLSYGHRVN--QT--EAVNTTQOE---HF--DN--LLPSQAITLTS-----VAGHFW
U57755_cat_B7_1	LLSYGHRVN--QT--EAVNTTQOE---HF--DN--LLPSQAITLTS-----VAGHFW
B7-1_MOUSE	LLSYGHRVN--QT--EAVNTTQOE---HF--DN--LLPSQAITLTS-----VAGHFW
AF157827_cat_B7-2	LLSYGHRVN--QT--EAVNTTQOE---HF--DN--LLPSQAITLTS-----VAGHFW
aaf17297_dog_B7-2	LLSYGHRVN--QT--EAVNTTQOE---HF--DN--LLPSQAITLTS-----VAGHFW
176088-pig_B7-2	LLSYGHRVN--QT--EAVNTTQOE---HF--DN--LLPSQAITLTS-----VAGHFW
u04343_hu_B7-2	LLSYGHRVN--QT--EAVNTTQOE---HF--DN--LLPSQAITLTS-----VAGHFW
P42082_mus_B7_2	LLSYGHRVN--QT--EAVNTTQOE---HF--DN--LLPSQAITLTS-----VAGHFW
aac52336_mus_B7-2_alt.spl	LLSYGHRVN--QT--EAVNTTQOE---HF--DN--LLPSQAITLTS-----VAGHFW
mz5020.protein	LLSYGHRVN--QT--EAVNTTQOE---HF--DN--LLPSQAITLTS-----VAGHFW
Q99420q99420_put_hum_B7-3	LLSYGHRVN--QT--EAVNTTQOE---HF--DN--LLPSQAITLTS-----VAGHFW
B7-1_HUMAN	COLTYCFAPFC---REKRN---RLRESVRPV-----
Q28499_rhesus_B7-1	COLTYCFAPFC---REKRN---RLRESVRPV-----
B7-1_RABBIT	COLTYCFAPFC---REKRN---RLRESVRPV-----
U57755_cat_B7_1	COLTYCFAPFC---REKRN---RLRESVRPV-----
B7-1_MOUSE	COLTYCFAPFC---REKRN---RLRESVRPV-----
AF157827_cat_B7-2	COLTYCFAPFC---REKRN---RLRESVRPV-----
aaf17297_dog_B7-2	COLTYCFAPFC---REKRN---RLRESVRPV-----
176088-pig_B7-2	COLTYCFAPFC---REKRN---RLRESVRPV-----
u04343_hu_B7-2	COLTYCFAPFC---REKRN---RLRESVRPV-----
P42082_mus_B7_2	COLTYCFAPFC---REKRN---RLRESVRPV-----
aac52336_mus_B7-2_alt.spl	COLTYCFAPFC---REKRN---RLRESVRPV-----
mz5020.protein	COLTYCFAPFC---REKRN---RLRESVRPV-----
Q99420q99420_put_hum_B7-3	COLTYCFAPFC---REKRN---RLRESVRPV-----
B7-1_HUMAN	-----
Q28499_rhesus_B7-1	-----
B7-1_RABBIT	-----
U57755_cat_B7_1	-----
B7-1_MOUSE	-----
AF157827_cat_B7-2	-----
aaf17297_dog_B7-2	-----
176088-pig_B7-2	-----
u04343_hu_B7-2	-----
P42082_mus_B7_2	-----
aac52336_mus_B7-2_alt.spl	-----
mz5020.protein	-----
Q99420q99420_put_hum_B7-3	-----
B7-1_HUMAN	-----
Q28499_rhesus_B7-1	-----
B7-1_RABBIT	-----
U57755_cat_B7_1	-----
B7-1_MOUSE	-----
AF157827_cat_B7-2	-----
aaf17297_dog_B7-2	-----
176088-pig_B7-2	-----
u04343_hu_B7-2	-----
P42082_mus_B7_2	-----
aac52336_mus_B7-2_alt.spl	-----
mz5020.protein	-----
Q99420q99420_put_hum_B7-3	-----

Fig. 4 Continued

SUBSTITUTE SHEET (RULE 26)

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B7-1_HUMAN	-----
Q28499_rhesus_B7-1	-----
B7-1_RABBIT	-----
U57755_cat_B7_1	-----
B7-1_MOUSE	-----
AF157827_cat_B7-2	-----
aaf17297_dog_B7-2	-----
176088-pig_B7-2	-----
u04343_hu_B7-2	-----
P42082_mus_B7_2	-----
aac52336_mus_B7-2_alt.spl	-----
mz5020.protein	GQPMTFPPEALWVTVGLSVCLIALLLVALAFVCWRKIKQSCEENAGAEDQDGEGEKSKTA
Q99420q99420_put_hum_B7-3	-----
B7-1_HUMAN	-----
Q28499_rhesus_B7-1	-----
B7-1_RABBIT	-----
U57755_cat_B7_1	-----
B7-1_MOUSE	-----
AF157827_cat_B7-2	-----
aaf17297_dog_B7-2	-----
176088-pig_B7-2	-----
u04343_hu_B7-2	-----
P42082_mus_B7_2	-----
aac52336_mus_B7-2_alt.spl	-----
mz5020.protein	LQPLKHSDSKEDDGQETIA
Q99420q99420_put_hum_B7-3	-----

Fig. 4 Continued

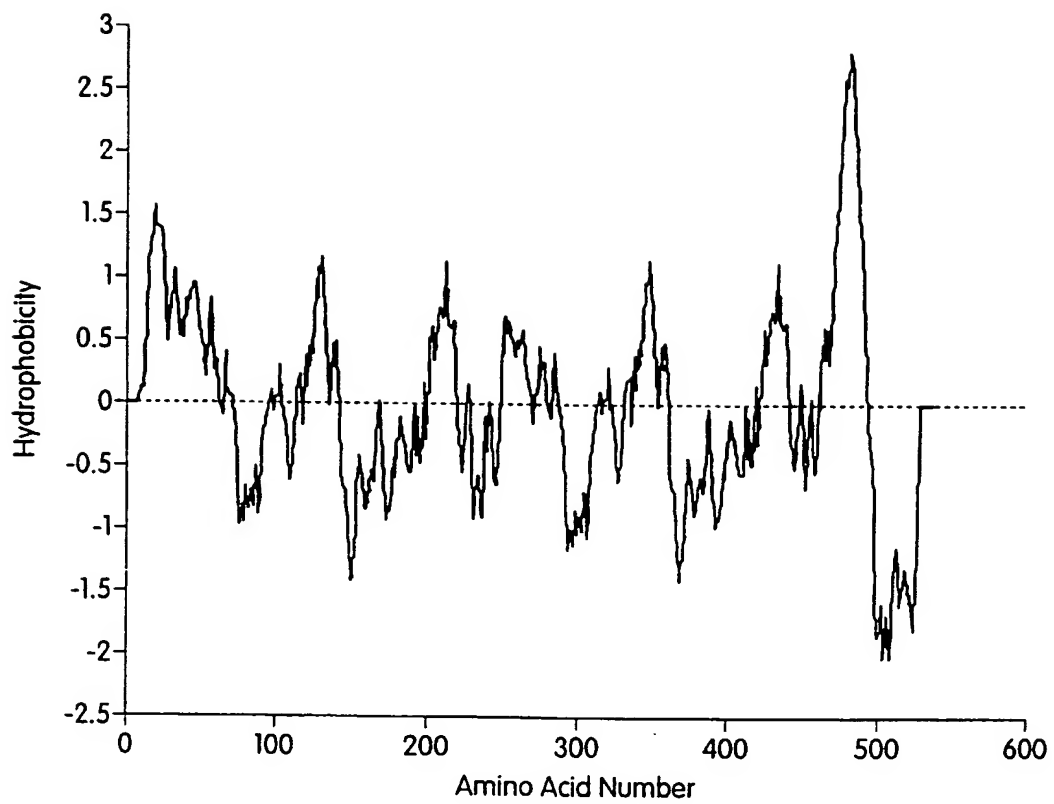


Fig. 5